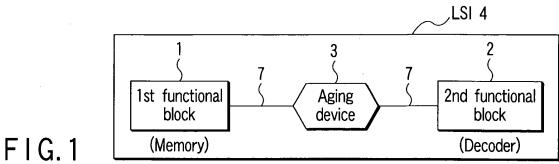
THE. THAT PHANT I ONC HON UTILIZATION APPARATUS Inventors: Hiroshi WATANABE et

al.

DOCKET NO.: 016907-1569



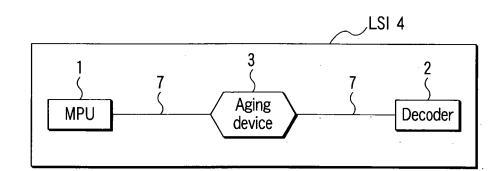
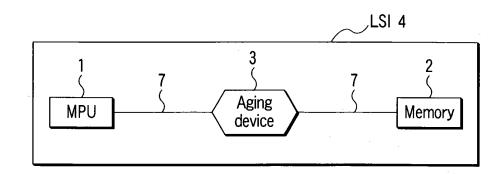


FIG.2



F I G. 3

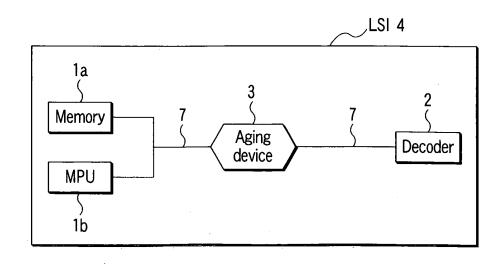


FIG.4

al.

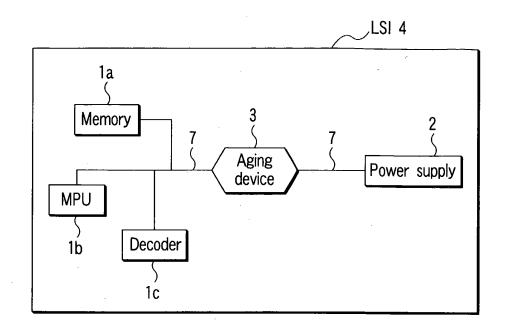


FIG. 5

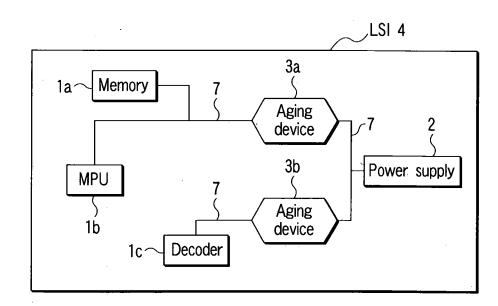


FIG.6

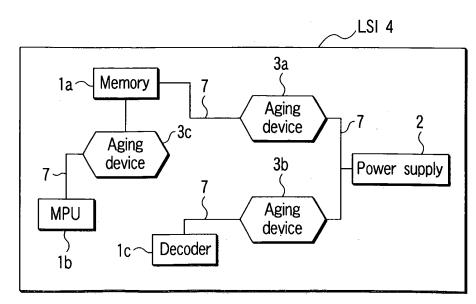
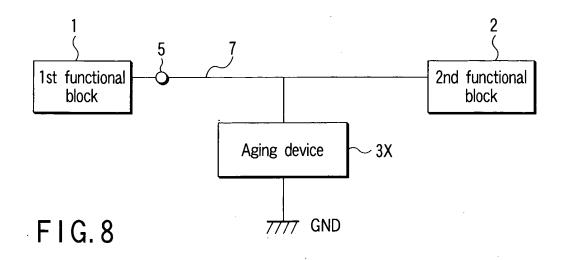
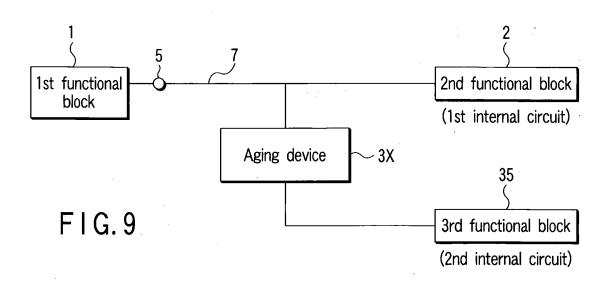
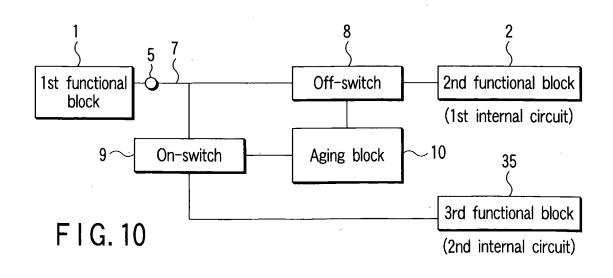
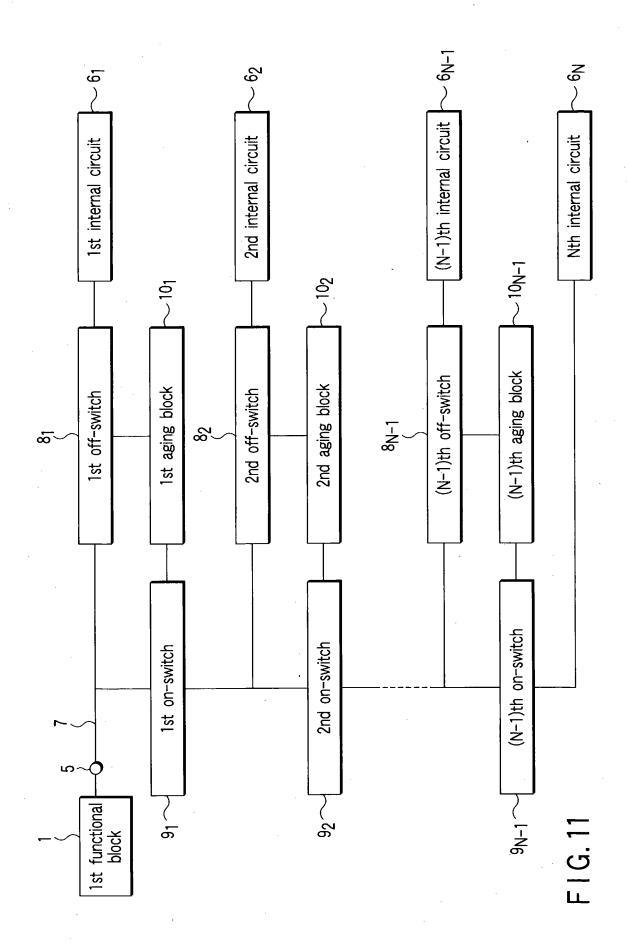


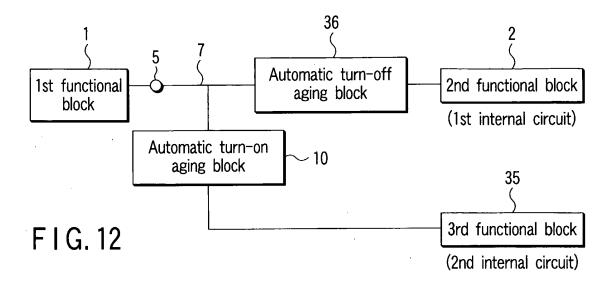
FIG. 7

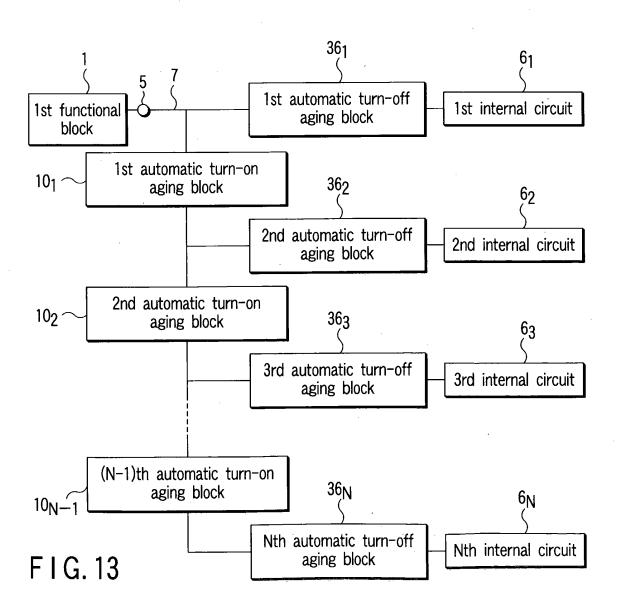


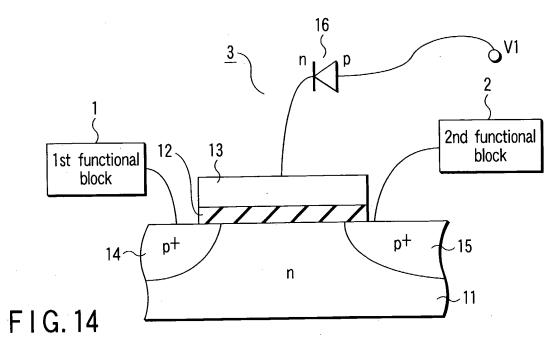


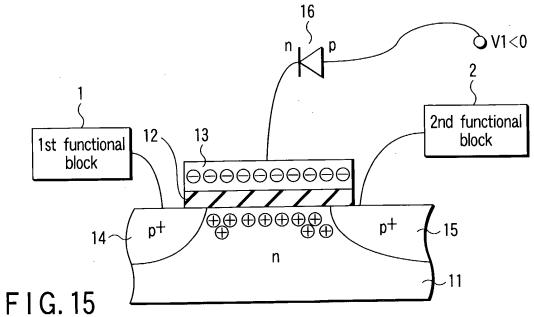












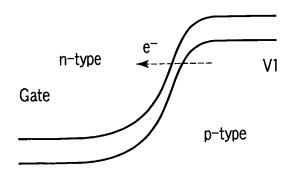
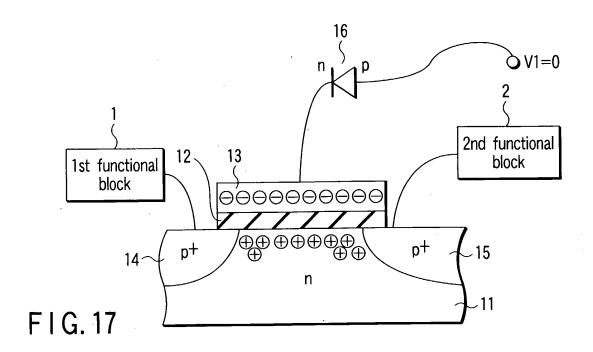
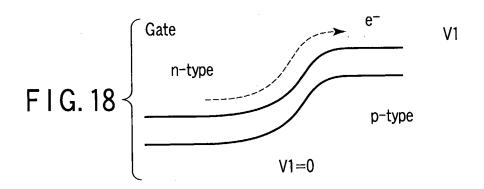
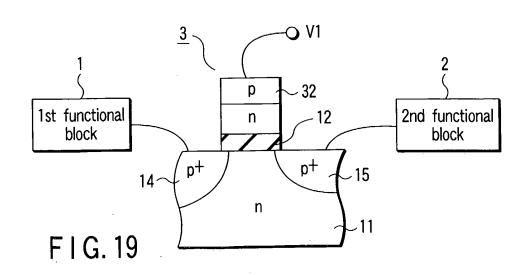
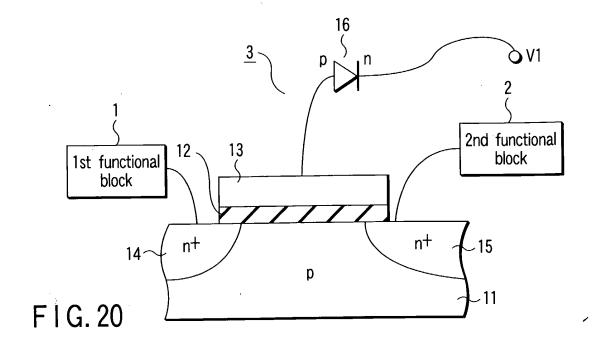


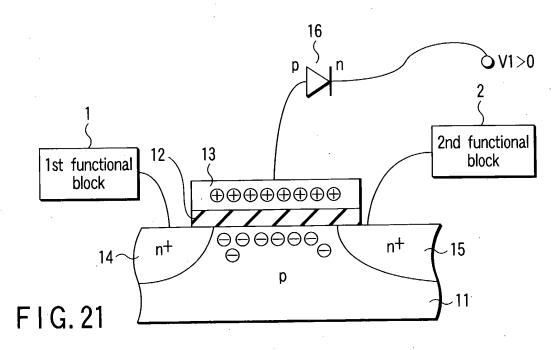
FIG. 16

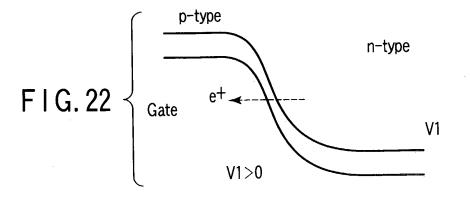




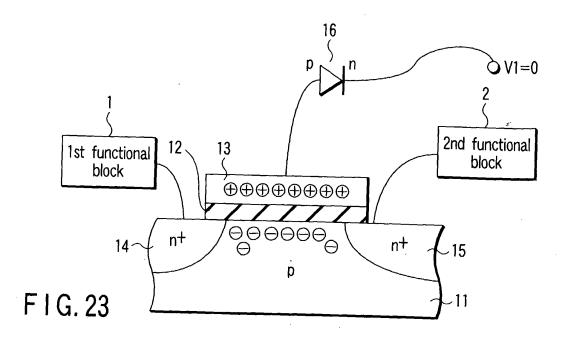


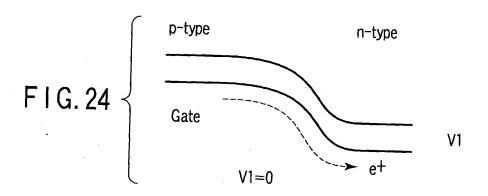


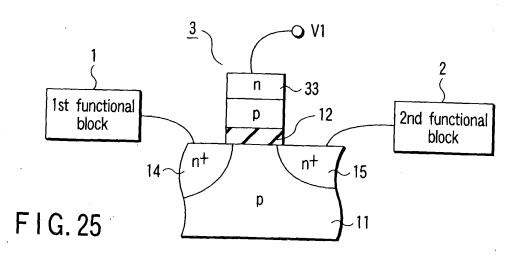




al.







al.

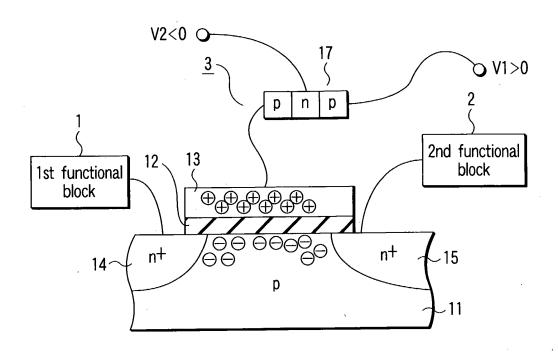


FIG. 26

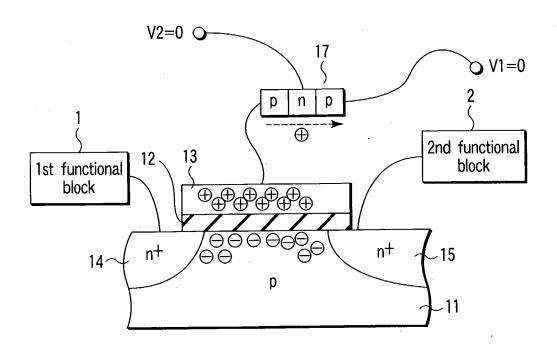
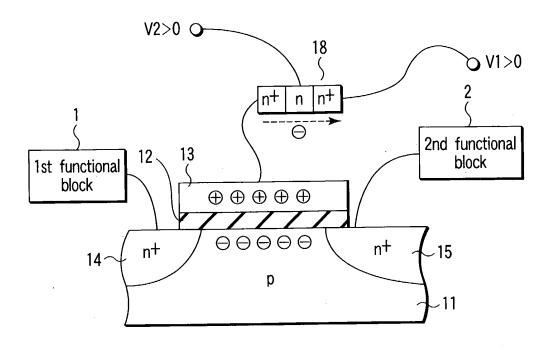


FIG. 27



F I G. 28

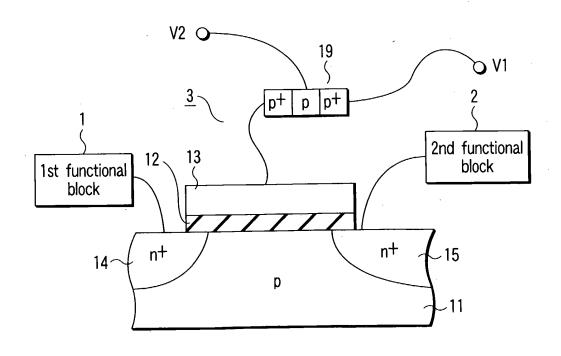


FIG. 29

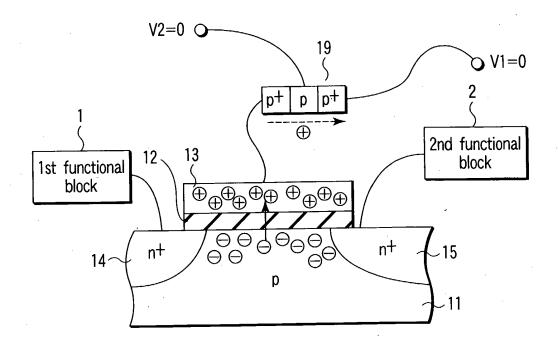


FIG. 30

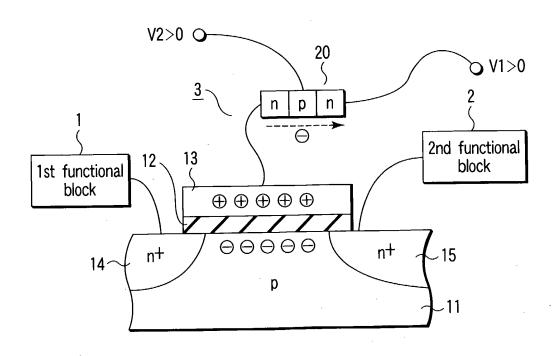


FIG. 31

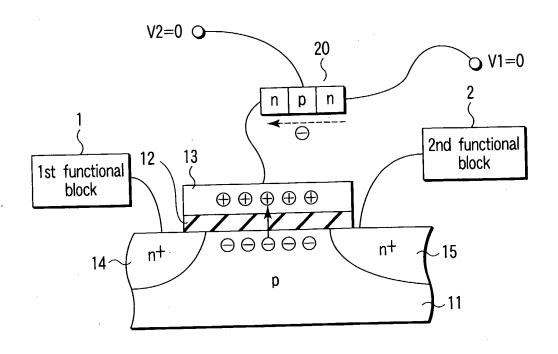


FIG. 32

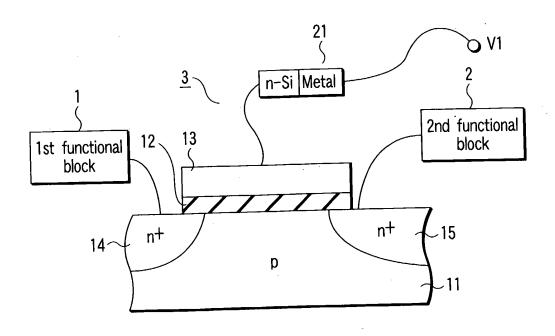
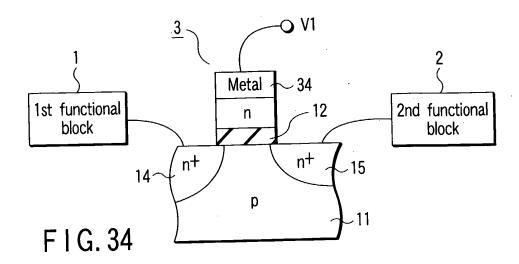
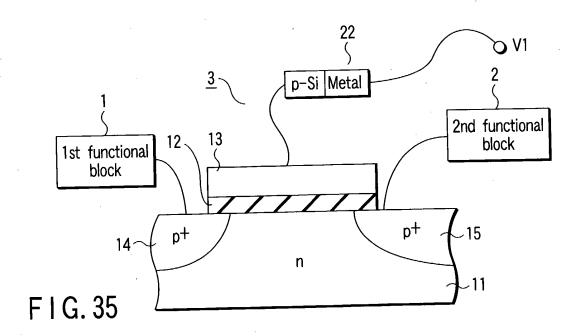
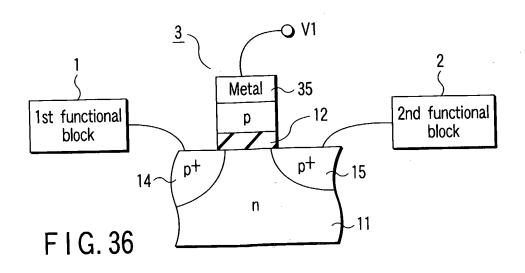


FIG. 33







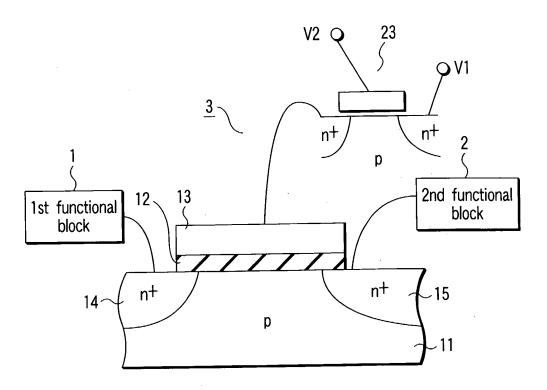


FIG. 37

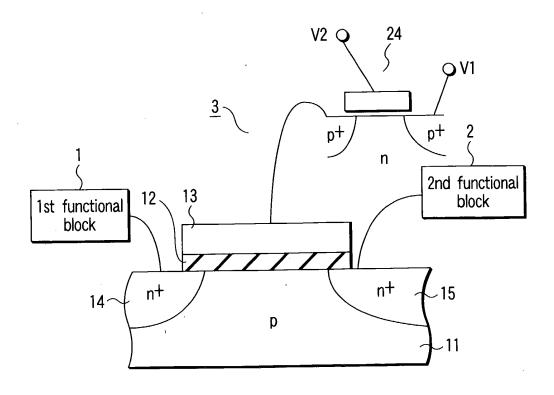


FIG. 38

al.

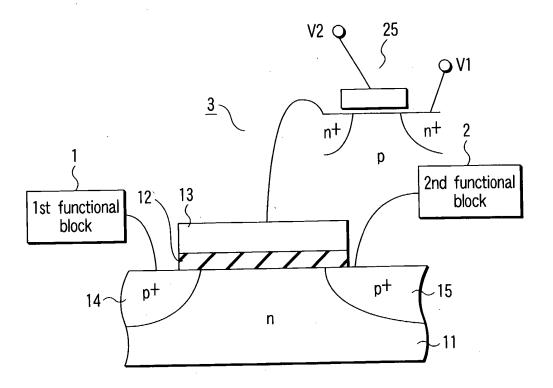


FIG. 39

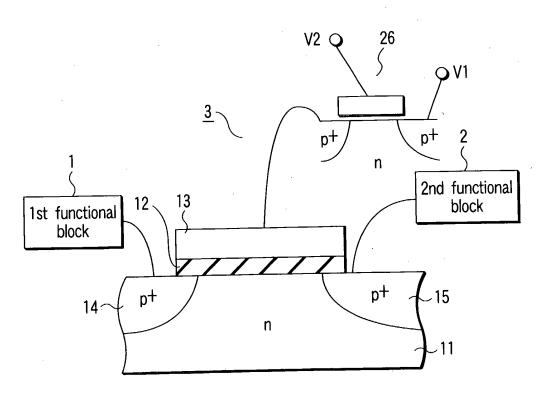
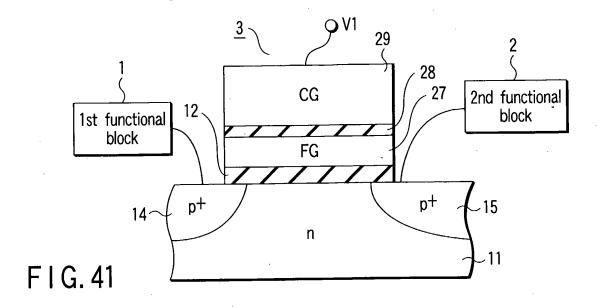
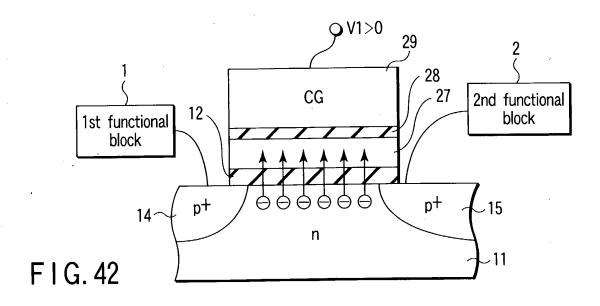
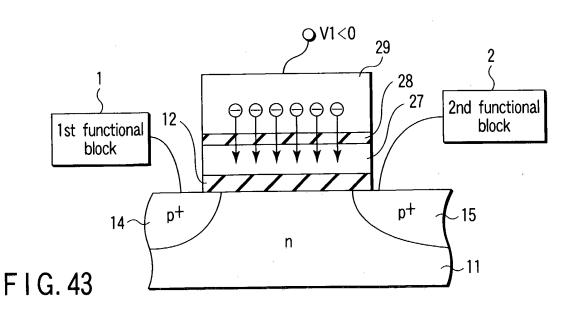


FIG. 40







UTILIZATION APPARATUS Inventors: Hiroshi WATANABE et DOCKET NO.: 016907-1569 **○** V1=0 29 28 27 CG 2nd functional block 12 1st functional  $\Theta \Theta \Theta$ p<sup>+</sup> p+ **-15** n **-11 ⊘** V1=0 29 28 CG - 27 2nd functional 12. 1st functional block  $\Theta \Phi \Theta$ 999 p+ p+ \_15 ń **-11** 29 29 -VG 🔾 - CG CG Area A∝1/Life <u>/2</u> 28 2nd functional block 27 15 p+ 15 p<sup>+</sup> p+ ∝Life /11 14 1st functional block FG FIG. 46B FIG. 46A

block

FIG. 44

14-

block

FIG. 45

FG

ʻp+

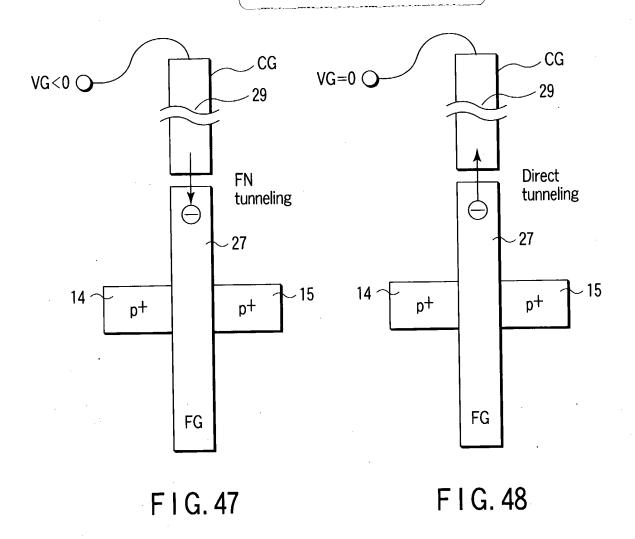
14

27

12-

n

14



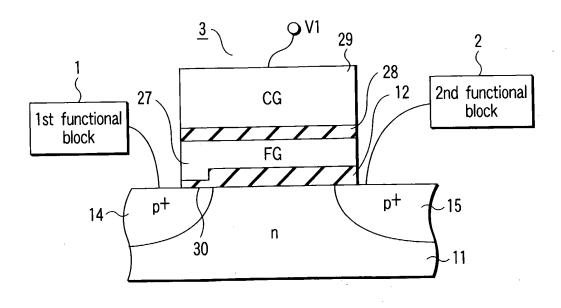
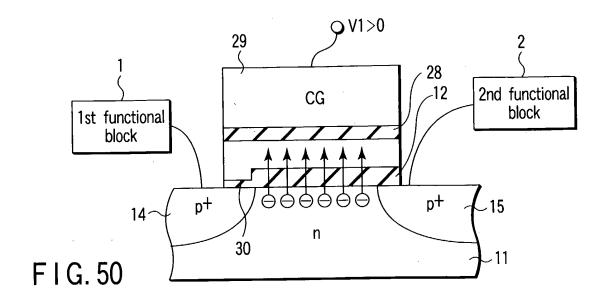
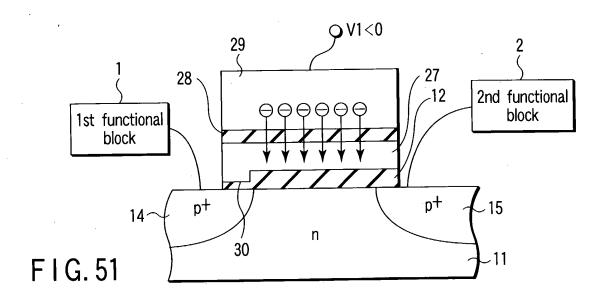
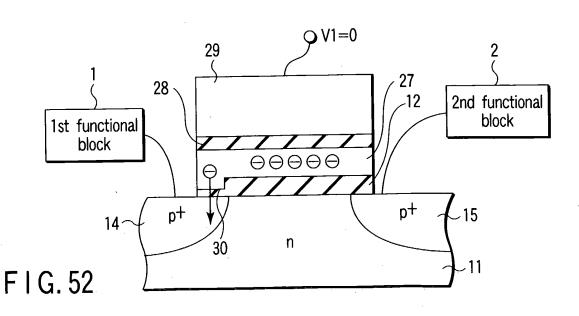


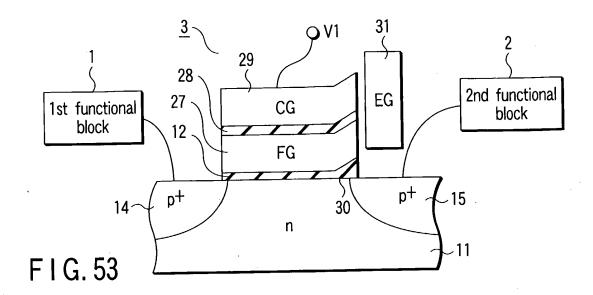
FIG. 49

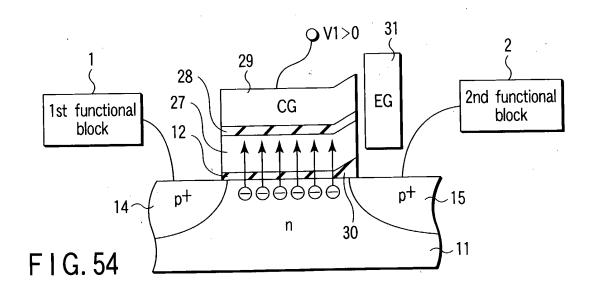
al.

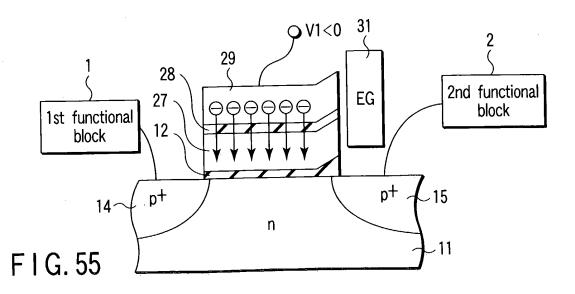


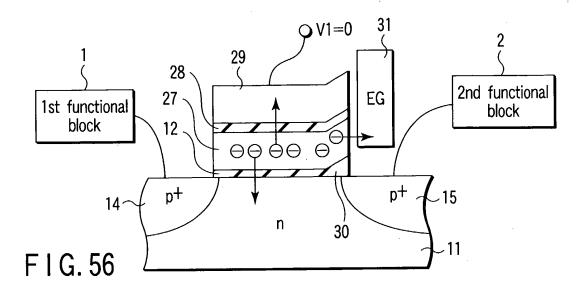


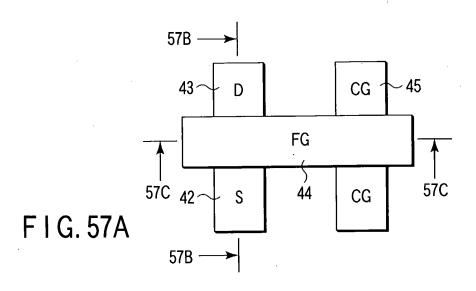


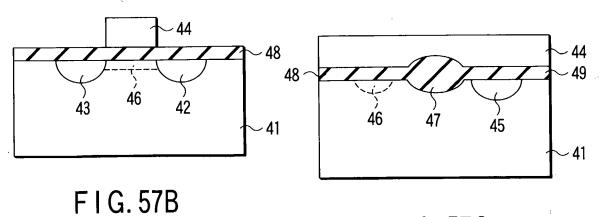




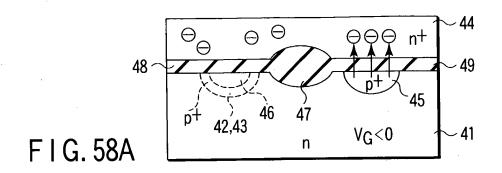


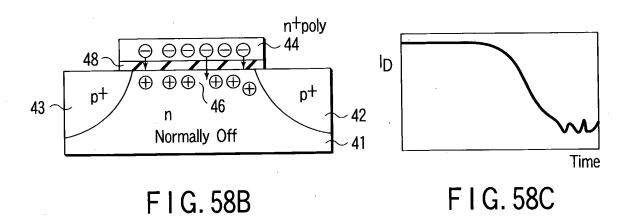


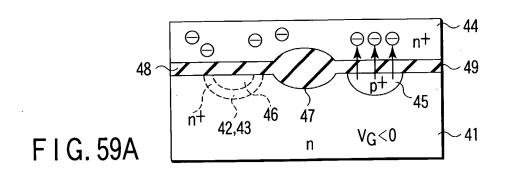


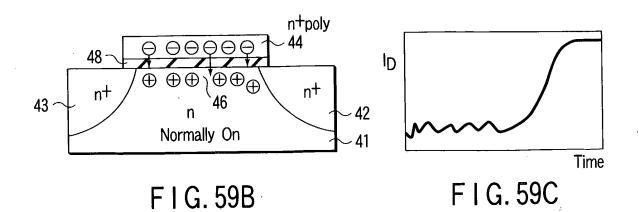


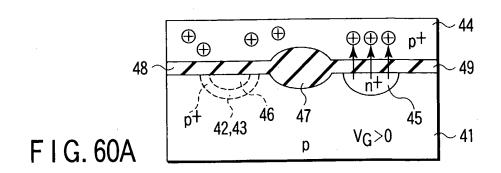
F I G. 57C

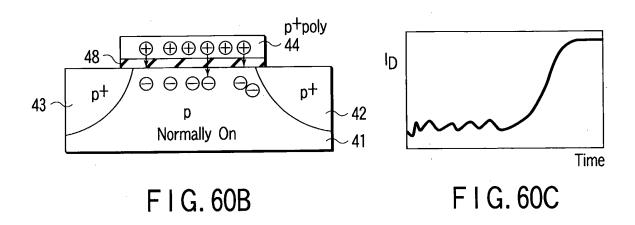


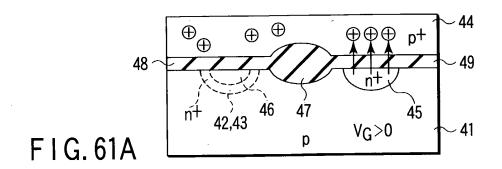


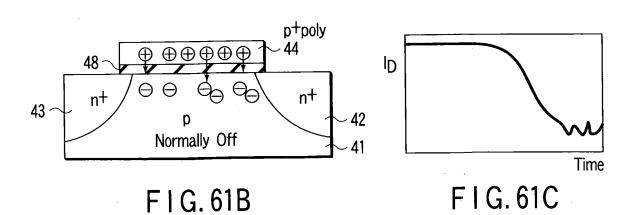












DOCKET NO.: 016907-1569 45 43 D CG FG 44 62B 42 62B CG F I G. 62A FG - 44 49 48 -46 42,43 47 F I G. 62B 45 CG 50 FG FG 44<sub>1</sub> 63B 442 63B 46 CG 42 FIG. 63A 50 442 441 FGFG**49** 48 ~ 45 F I G. 63B

UTILIZATION APPARATUS Inventors: Hiroshi WATANABE et

UTILIZATION APPARATUS Inventors: Hiroshi WATANABE et DOCKET NO.: 016907-1569 **- 45** 43~ CG 50 FG  $\mathsf{FG}$ 64B 64B S CGFIG. 64A 42 50 442 FG FG 48 -49 45 42,43 F I G. 64B 50 CG FG CG FG S 45 65B FIG. 65A 441 442 50 441 48~ ) 46 43 ) 45 41 FIG. 65B

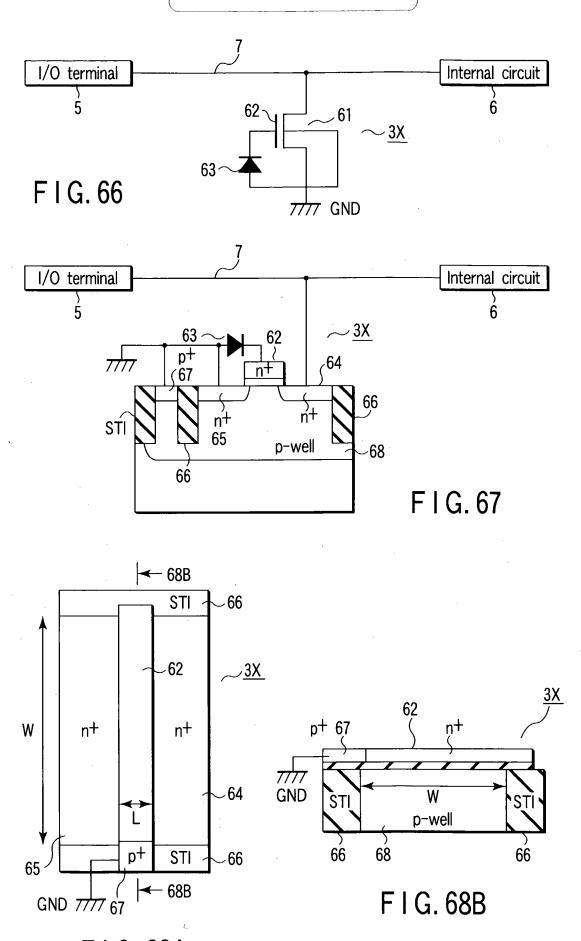


FIG. 68A

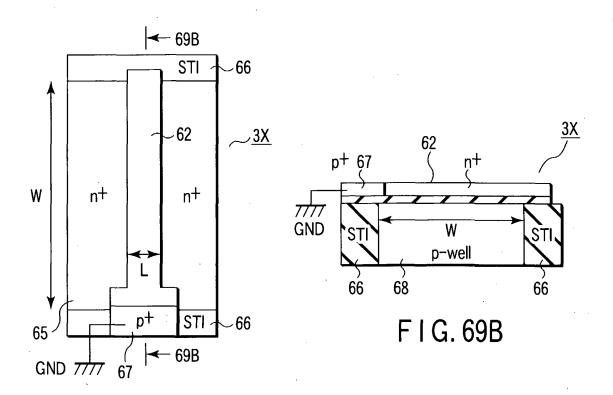


FIG. 69A

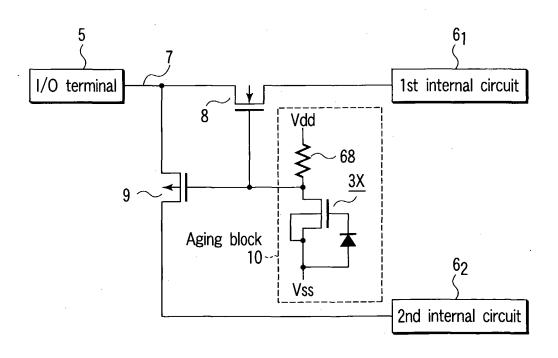
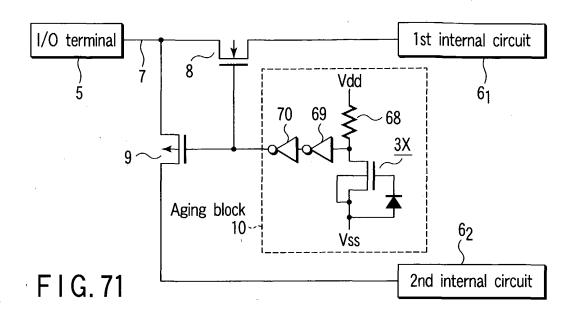
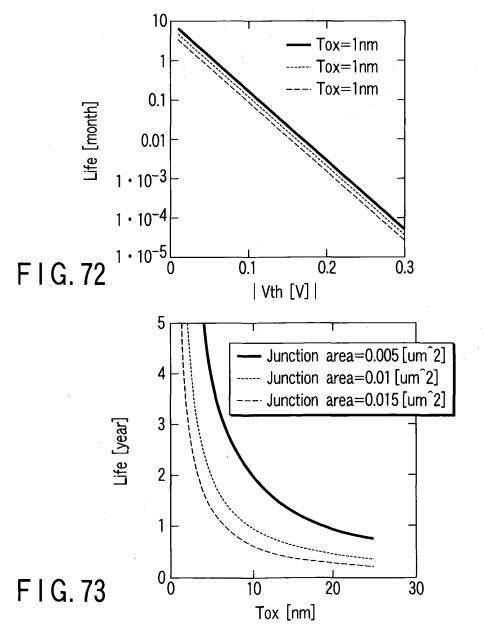
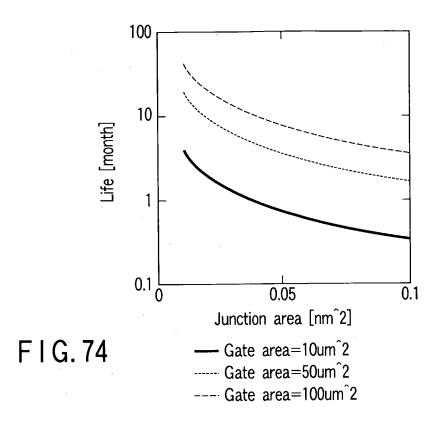


FIG. 70







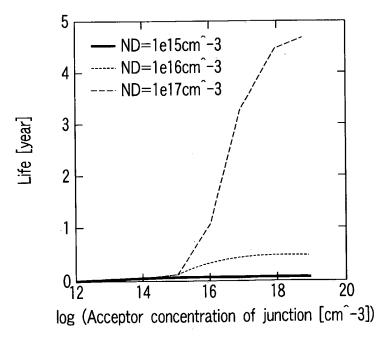
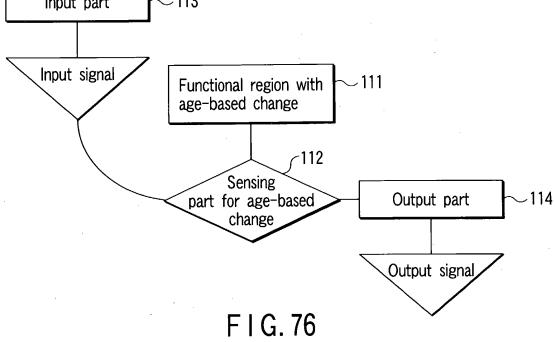


FIG. 75

~11<mark>3</mark> Input part Input signal Functional region with age-based change -111



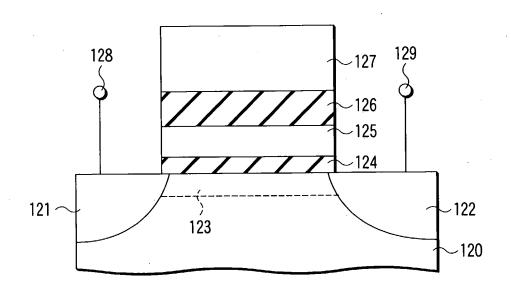


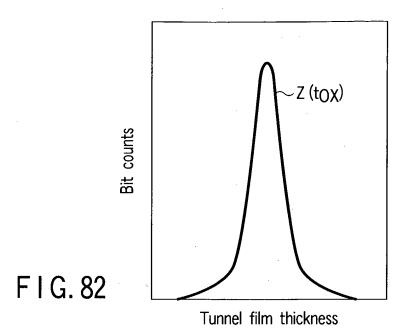
FIG. 77

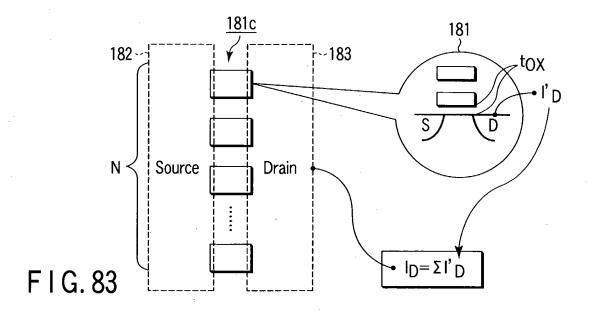
al. DOCKET NO.: 016907-1569 9~129 Time <u>0</u>0 ಭ 128 Output signal Output signal F1G.78F F1G. 78C Time Time 0 128 128 Output signal Output signal F1G. 78E F I G. 78B -125 ~-129 Time Time 0000000 96 2 128 Output signal Output signal F1G. 78A

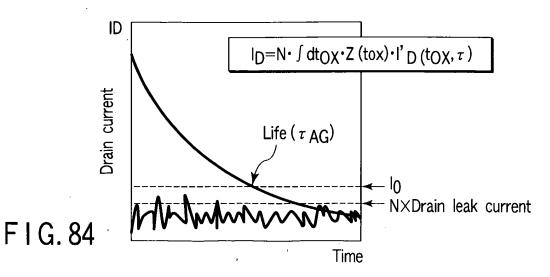
UTILIZATION APPARATUS Inventors: Hiroshi WATANABE et

Inventors: Hiroshi WATANABE et DOCKET NO.: 016907-1569 Output signal Noise level FIG. 79 Time ťa tb n 1<u>5</u>6 158 159 155 <u>154</u> p+ p+ 151 -**~152** 153 n-Si -150 FIG. 80 n-Si Metal 157 158 159 -155 154 n+ n+ 151~ **-152** 153 p-Si F I G. 81 150

UTILIZATION APPARATUS







al.

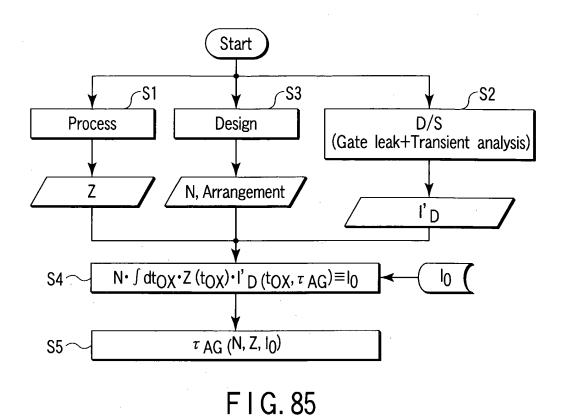
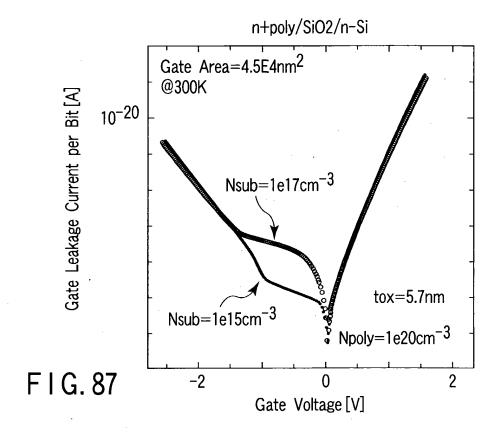
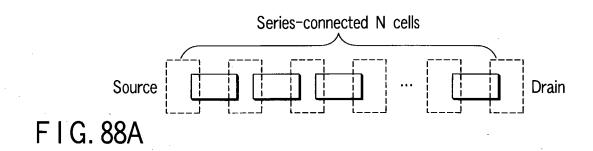
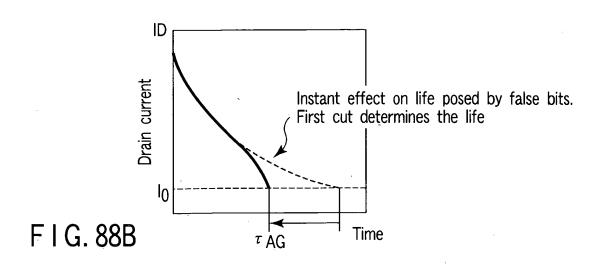
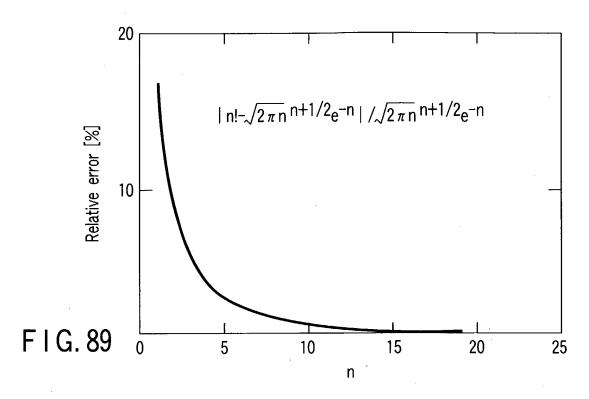


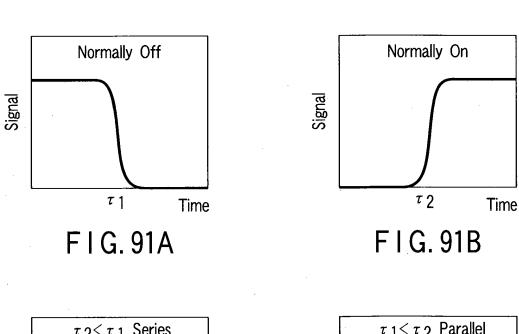
FIG. 86

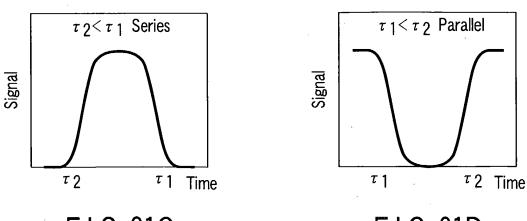












F I G. 91C F

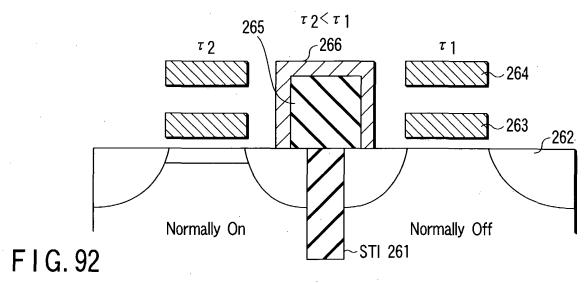
FIG. 91D

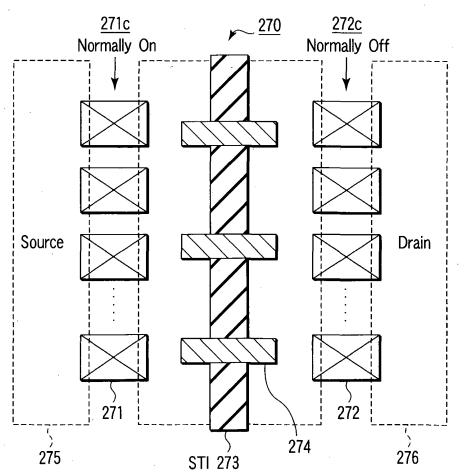
al.

DOCKET NO.: 016907-1569

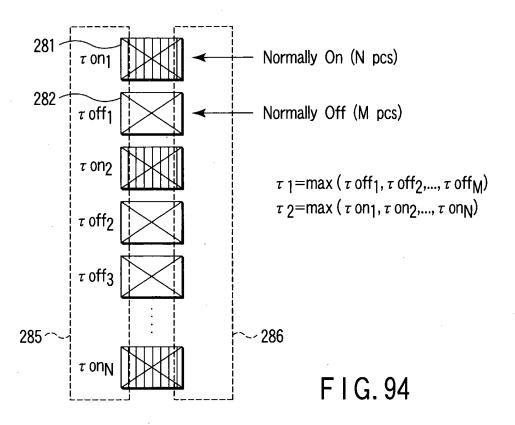
F1G.90

FIG. 93





al.



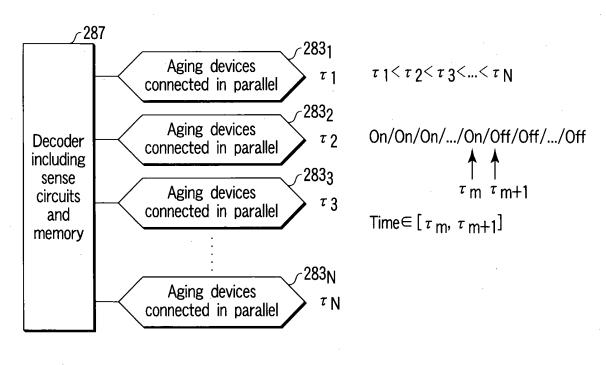
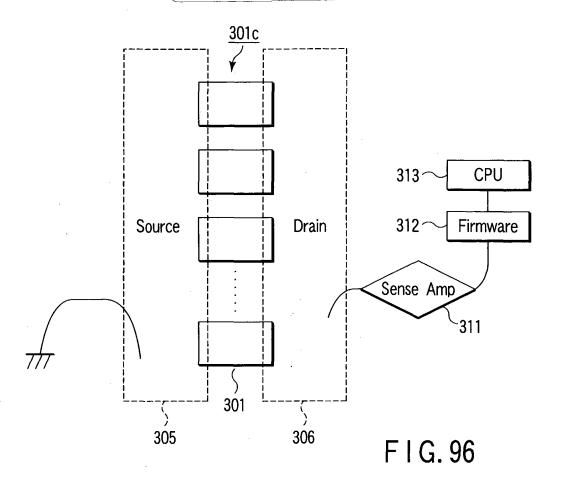


FIG. 95



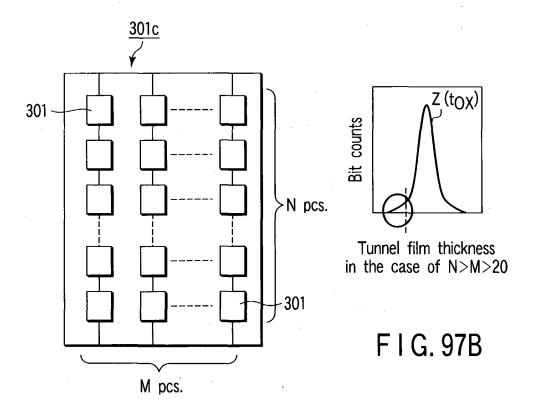
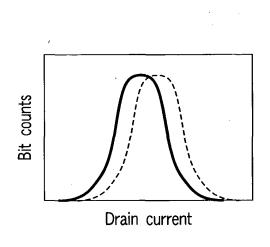
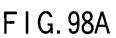


FIG. 97A

al.





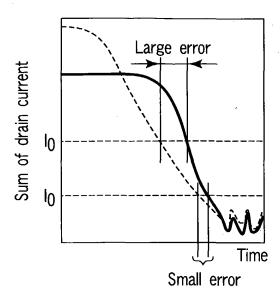
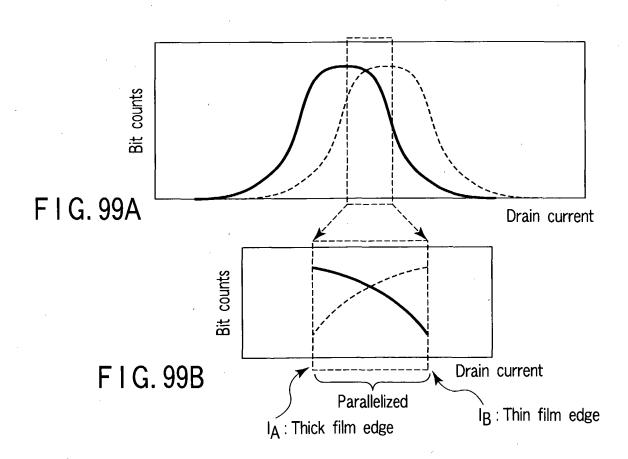
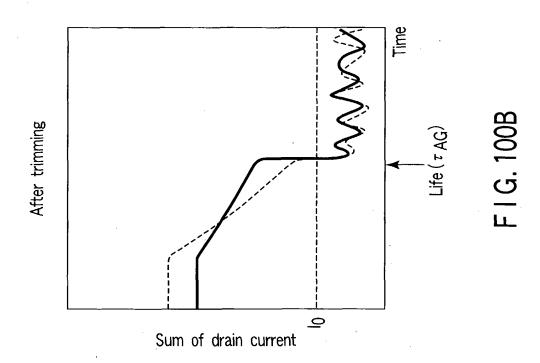
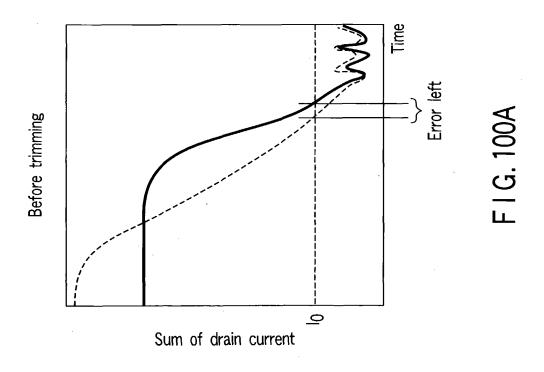


FIG. 98B







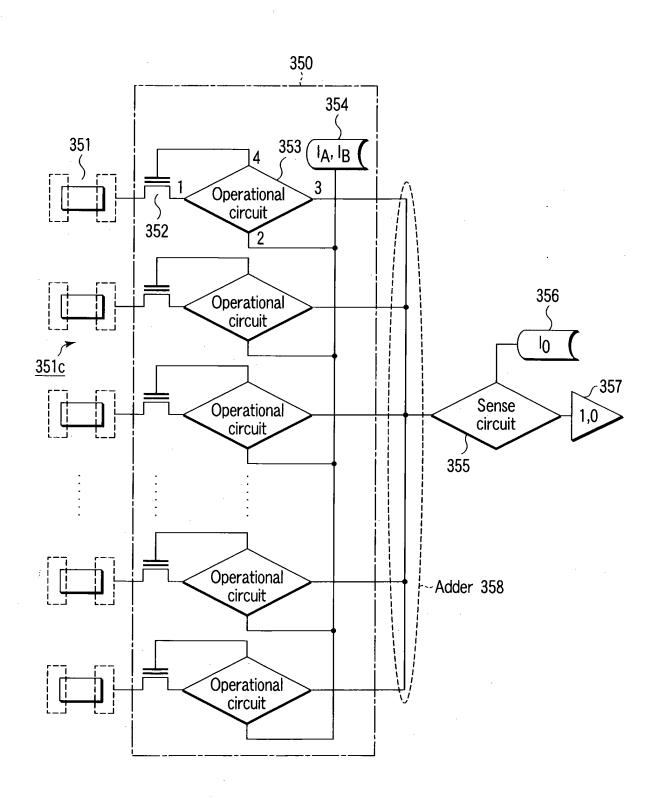


FIG. 101

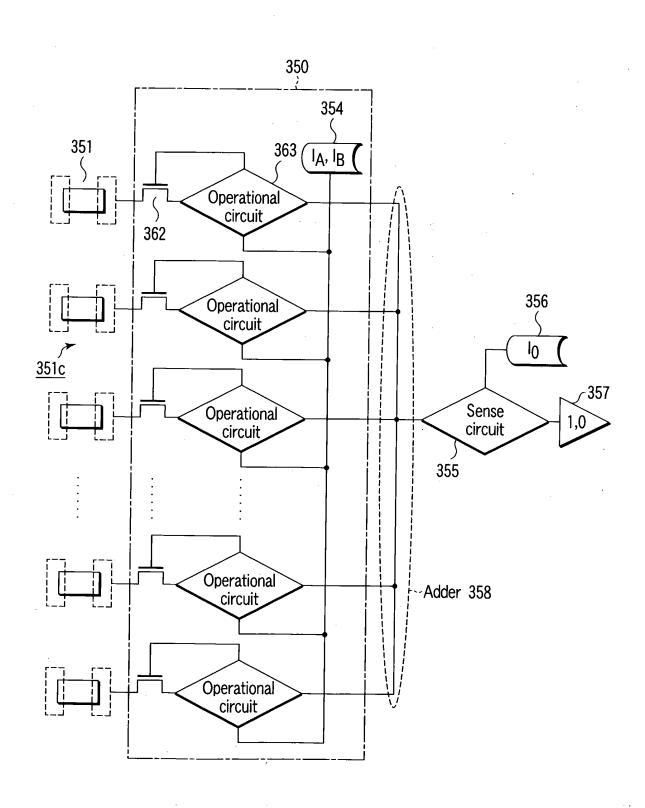


FIG. 102

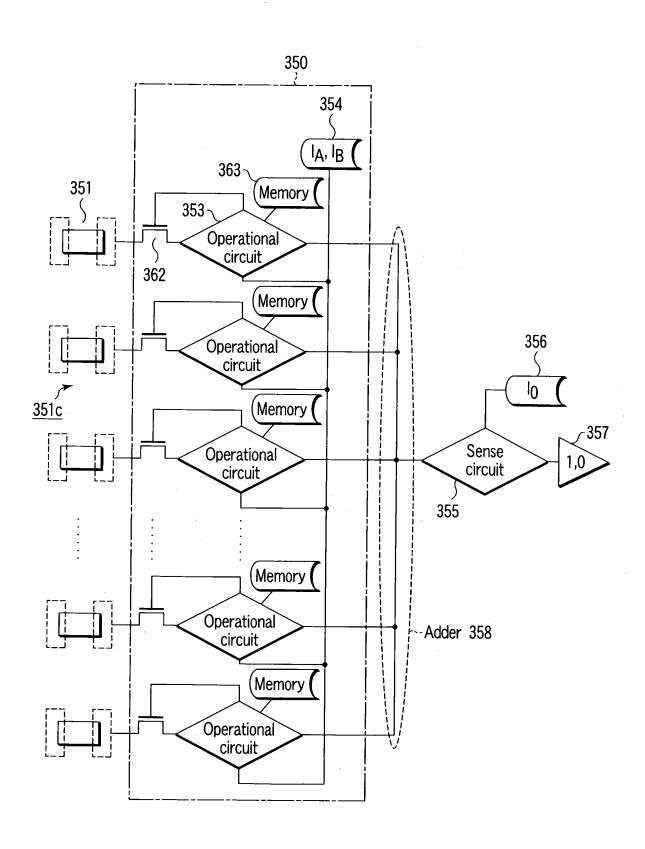
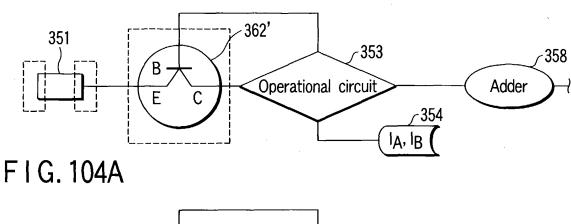
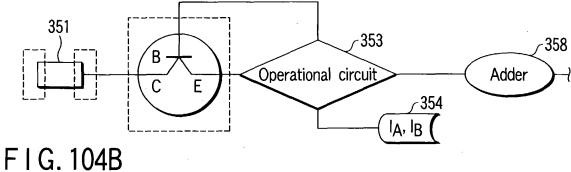
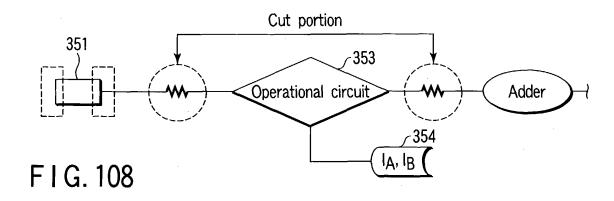


FIG. 103







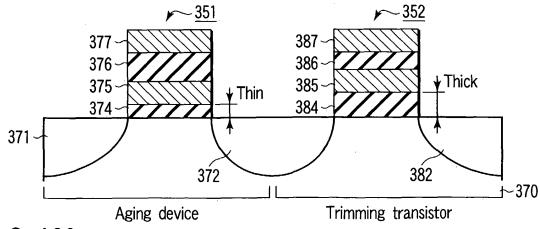


FIG. 109

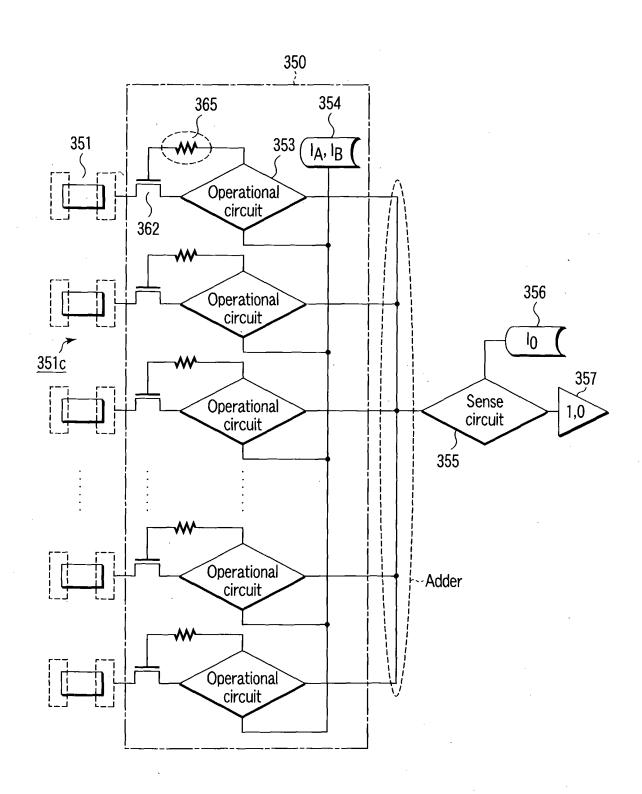


FIG. 105

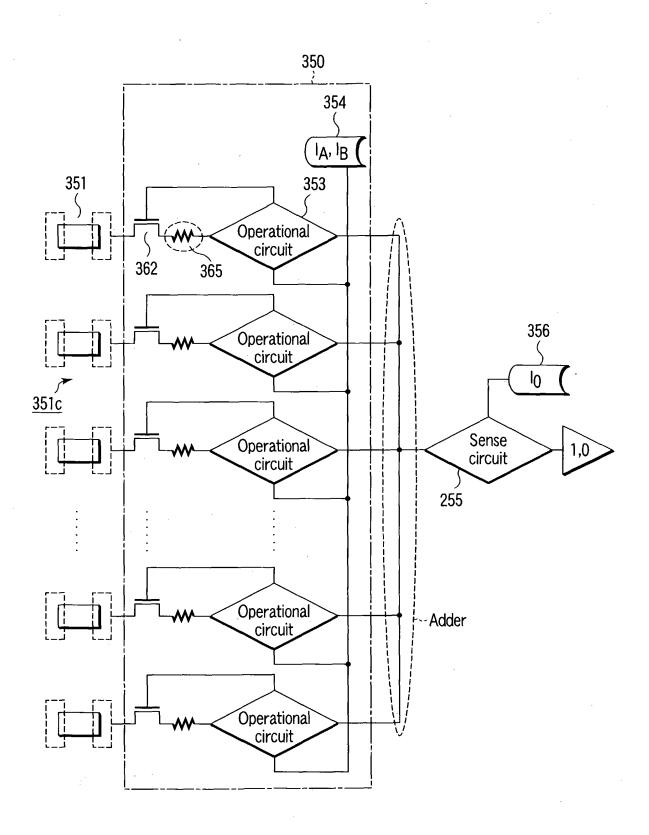


FIG. 106

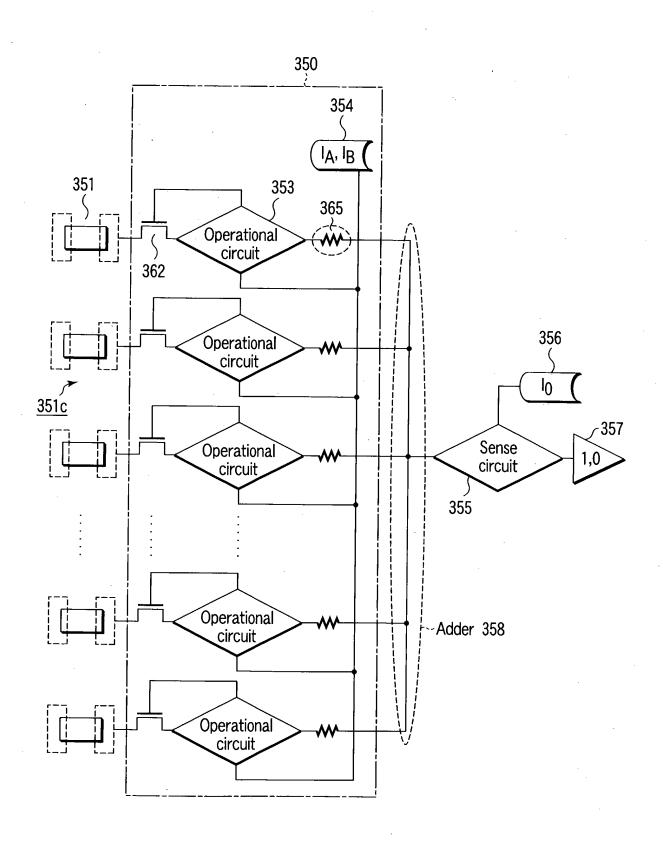
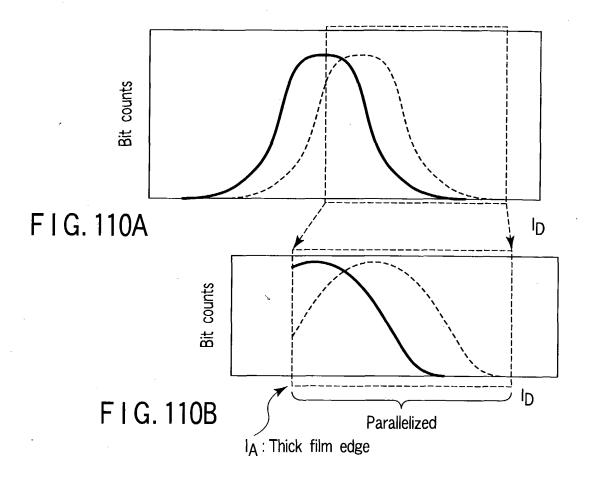
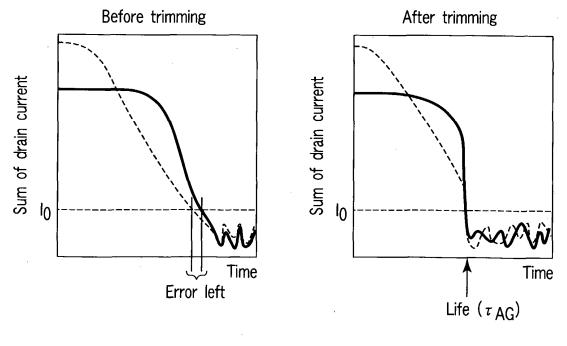


FIG. 107

al.





F I G. 111A

FIG. 111B

al.

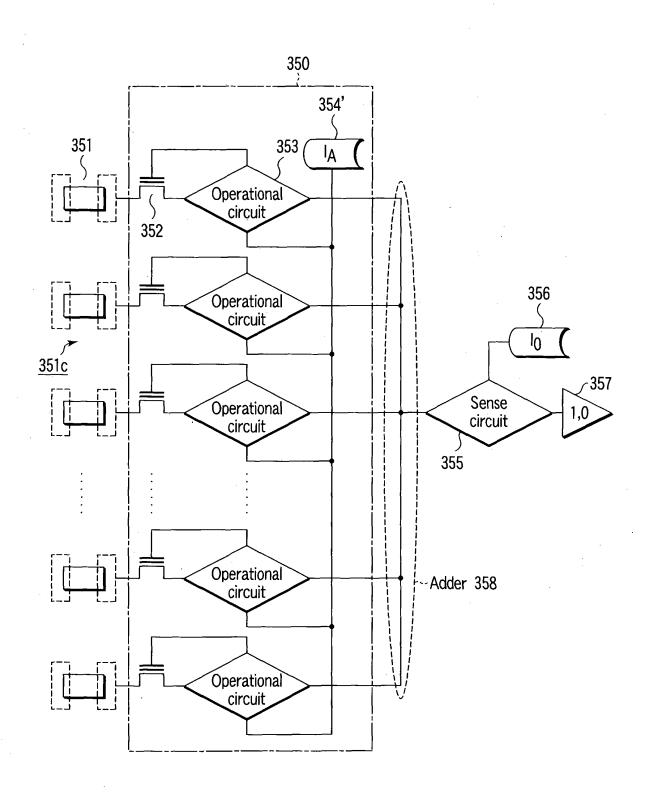


FIG. 112

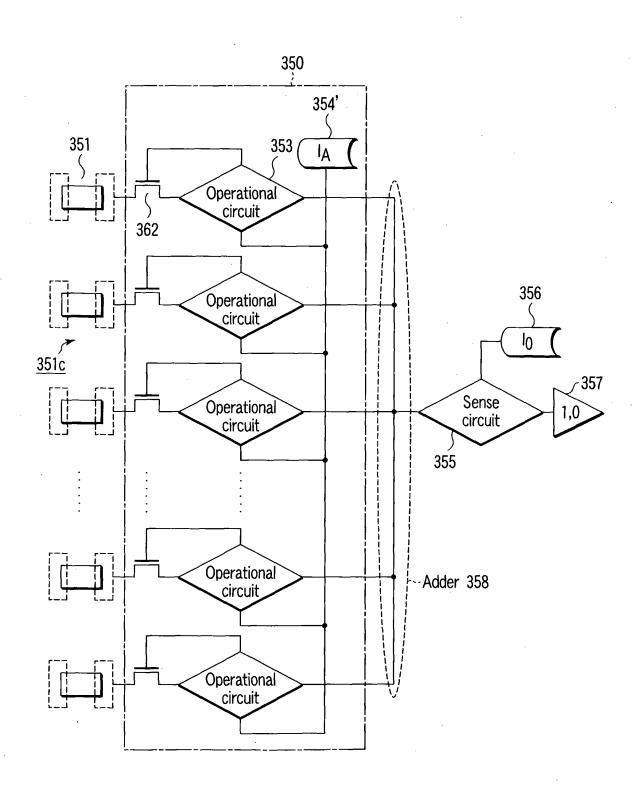


FIG. 113

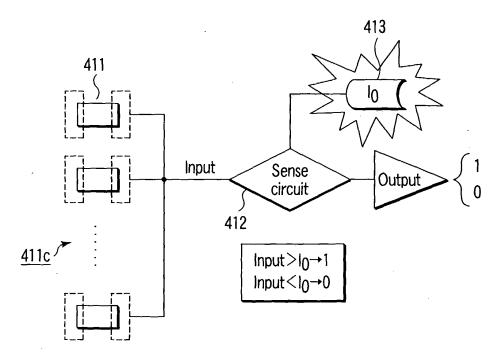


FIG. 114

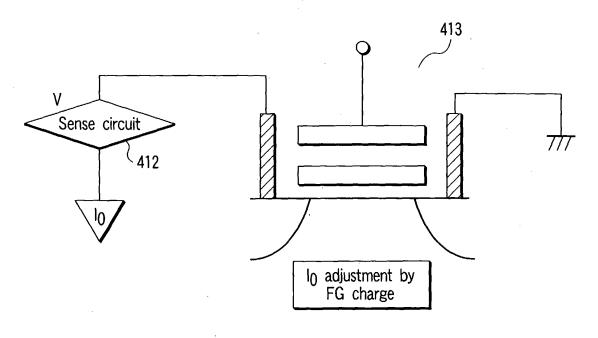
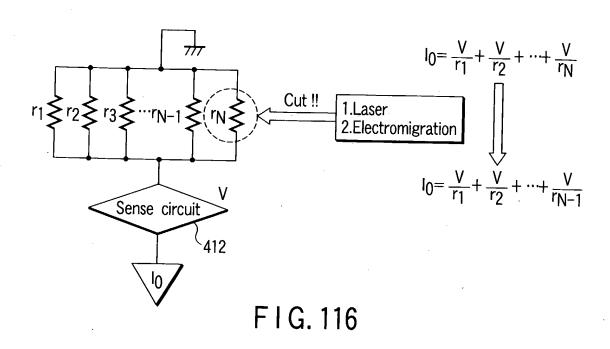


FIG. 115



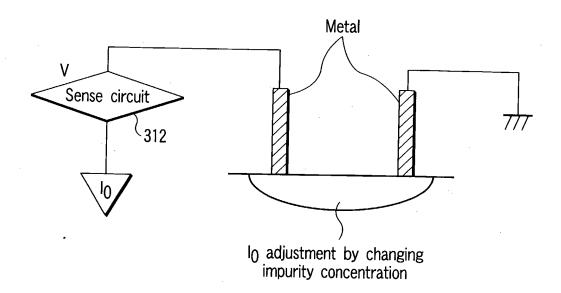


FIG. 117

